

NOTE ON THE DIRECTION OF FLIGHT OF BUTTERFLIES IN NORTHERN FLORIDA.

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A census was taken of the direction of flight of butterflies across the campus of the Florida State College for Women at Tallahassee, Florida, on October 30, 1944. For about a week prior to this time, there was noticed a marked tendency of nearly all butterflies in the region toward mass movements. This had followed the occurrence of a change in climate a few weeks previously, from the hot and sultry Gulf coast condition to a dryer and cooler continental condition, apparently correlated with the shifting of the air mass movements at this time of year.

Prior to the change in climate, most species of butterflies seemed sedentary. Afterwards for several weeks, a great number assumed a migratory aspect and were on the move, generally in a southward direction.

The following list represents the species seen and the number of each counted within the period of one-half hour (1:45-2:15 P.M., E.W.T.):

	North	East	South	West
<i>Heliconius charithonia</i> . . .	1	..	..	..
<i>Phoebis eubule</i>	3	17	70	4
<i>Colias eurytheme</i> . . . . .	..	..	2	..
<i>Eurema nicippe</i> . . . . .	..	..	4	..
<i>Eurema lisa</i> . . . . .	..	..	4	..
<i>Zerene caesonia</i>	2	..	2	..
<i>Dione vanillae</i> . . . . .	..	..	12	..
<i>Danaus plexippus</i> . . . . .	..	1	1	..
<i>Junonia lavinia (coenia)</i> .	2	..	1	..
<i>Eudamus</i> sp. . . . .	..	1	8	..
Combined total	8	19	104	4

All species were flying swiftly over the terrain except the *Heliconius* and the *Junonia lavinia* which maintained local short flights as under normal conditions.

Special mention should be made of *Colias eurytheme* (the orange alfalfa butterfly). This species was not observed at all during the months of September and most of October in the vicinity of Tallahassee and Chattahoochee, Northern Florida. It did not appear

until this general southern flight was observed and at least two weeks after the onset of the climatic change. The specimens were of the phenotype expected when bred under warm and humid conditions. Dates of observation are:

Oct. 27, 1944. Orange female laying eggs on clover.

Oct. 29, 1944. Orange female flying.

Oct. 30, 1944. White female flying south.

Orange female flying south.

Nov. 9, 1944. Two orange females flying and laying eggs.

No males were observed.

The point of this note is that Florida is, on the extreme southern limits of temperature tolerance for *Colias eurytheme*. It seems to be absent in the summer and may only be reintroduced by southward migrations in the fall. The clover used as food by the larvae does not seem to be in growing condition until the onset of the cooler season. The only *Colias* specimens seen were females, and female *Colias* are more migratory than males. Museum material records that males are present in the springtime at Monticello (20 mi. east of Tallahassee). Complete seasonal studies should be made in order to determine more precisely the nature of the presence of *Colias* in this region.

"THAN"—WHAT?

"Species of medium size." How long is a piece of string?

In a key—contrasting characters(!?) "Antennae more slender" than what?

"Antennae shorter, more swollen" than what?

A generic characterization: "Differs from the other genera in the tribe in its longer, more parallel body, shorter legs, and armed hind femora. From its nearest ally *Exus* (an alias to conceal identity), by the long simple or slightly forked veins."

"Longer" than what? "More parallel" than what? "Shorter legs" than what?

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